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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/670,736	09/27/2000	William J. Rooney	POU920000103US1	7694
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EXAMINER

SORRELL, ERON J

ART UNIT

PAPER NUMBER

2182

DATE MAILED: 03/24/2003

cf

Please find below and/or attached an Office communication concerning this application or proceeding.

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**Office Action Summary**

Application No.

09/670,736

Applicant(s)

ROONEY ET AL.

Examiner

Eron J Sorrell

Art Unit

2182

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

**DETAILED ACTION**

1. Please update the status of the co-pending U.S. Patent Applications with serial numbers or U.S. Patent Numbers.

***Claim Rejections - 35 USC § 103***

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the

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art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-5,7,9-13,15,17-21, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shank et al. (U.S. Patent No. 6,145,028 hereinafter referred to as Shank) in view of Glassen et al. (U.S. Patent No. 5,671,441 hereinafter referred to as Glassen).

5. Referring to method claim 1, system claim 9, and article of manufacture claim 17, Shank discloses a method and system for selecting one of a plurality of proposed paths to a device comprising:

an algorithm to select a path to send an I/O request among the available paths (see lines 58-67 of column 6). Shank further discloses that many selection policies can be used (see lines 17-35 of column 7), however Shank fails to disclose determining the number of components of the proposed path shares with existing paths to the device, wherein the components comprise points of failure.

Glassen discloses a method and system comprising determining a number of components the proposed path shares with existing paths to the device, wherein the components comprise points of failure (see lines 25-35 of column 3).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the method of Shank with that of Glassen such that it comprises the step of determining a number of components the proposed path shares with existing paths to the device, wherein the components comprise points of failure and using the determined number of shared components from each path to select one proposed path. One of ordinary skill in the art at the time of the applicant's invention would have been motivated to make this modification because Glassen suggests the method provides means for automatically identifying I/O components shared by other I/O components (see lines 6-11 of column 1) thus reducing errors caused by a user manually entering this information.

6. Referring to method claims 2 and 3, system claims 10 and 11, and article of manufacture claims 18 and 19, Shank discloses selecting an optimized path for sending and receiving the I/O requests (see lines 5-19 of column 5). Shank fails to explicitly set forth the limitation that the path with the least number of shared components is selected and to provide an additional path and the path with the most shared components is selected to be removed, however it would have been obvious to one of ordinary skill in the art at the time of the applicant's

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invention to do so, because Shank states selecting the optimum path, and one of ordinary skill in the would have recognized the path with the least number of shared components is the optimum path.

7. Referring to method claim 4, system claim 12, and article of manufacture claim 20, Shank discloses that each path includes an adapter in a computer (see item labeled 130 in figure 1) and an interface port in the device (see items labeled 118, 120, and 122 in figure 1). The system and method of Shank modified with the system and method of Glassen would determine the number of components the adapter in the proposed path shares with the adaptors of existing paths with and determining a number of components the proposed path shares with the interface ports of existing paths to the device (see Glassen lines 25-35 of column 3).

8. Referring to method claim 5, system claim 13, and article of manufacture claim 21, Glassen discloses each path including a source port and destination port on a switch (see items labeled "Dynamic Switch" in figure 3), wherein the adapter for the path connects to the source port of the switch (see item labeled 88 in figure 3) and wherein the interface port for the path

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connects to the destination port of the switch, wherein determining the number of components the proposed path has in common with existing paths further comprises determining components on the switch the proposed path has in common with existing paths.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to further modify the system of Shank such that it comprises switches reduce the total number of physical paths required for complete connectivity of all the nodes in the system.

9. Referring to method claim 7, system claim 15, and article of manufacture claim 23, Shank discloses the device comprises a control unit providing access to a storage space (see item labeled 104 in figure 1), and wherein each proposed path connects one adapter in the computer with one interface port in the control unit (see items labeled 118,120,122 in figure 1).

10. Claims 6,14, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shank in view of Glassen as applied to claims 1,9 and 17 above above, and further in view of Spagnolo et al. (U.S. Patent No. 6,526,024 hereinafter referred to as Spagnolo).

11. Referring to method claim 6, system claim 14, and article of manufacture 22, both Shank and Glassen fails to disclose determining whether the source port and destination port of the proposed path is in a port card including the source or destination port of any existing paths, however Glassen does disclose the paths comprising switches.

Spagnolo discloses a switch with port cards capable of sending and receiving data packet fragments (see lines 32-52 of column 1).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to further modify the system and method of Shank such that the switches comprise port cards and determining whether the source port and destination port of the proposed path is in a port card including the source or destination port of any existing paths. One of ordinary skill in the art at the time of the applicant's invention would have been motivated to make such modification in order to send and receive fragments of packets increasing the flexibility of system.



**Allowable Subject Matter**

12. Claims 8,16 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. The following is a statement of reasons for the indication of allowable subject matter: The prior art disclosed by the applicant and cited by the Examiner fail to teach or suggest, alone or in combination, maintaining and incrementing an availability index and using that availability index to select the proposed path.

**Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is reminded that in amending in response to a rejection of claims, the patentable novelty must be clearly shown in view of the state of the art disclosed by the references cited and the objections made. Applicant must also show how the amendments avoid such references and objections. See 37 CFR § 1.111(c).

The following U.S. Patents are cited to further show the state of the art as it pertains to path selection:

U.S. Patent No. 6,363,535 to Burton et al.

U.S. Patent No. 6,434,637 to D'Errico

U.S. Patent No. 4,697,232 to Brunelle et al.

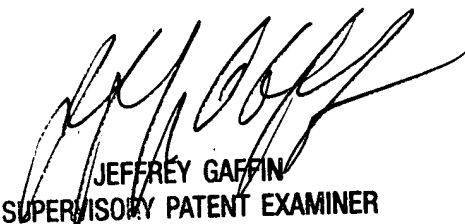
U.S. Patent No. 5,388,243 to Glider et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eron J Sorrell whose telephone number is 703 305-7800. The examiner can normally be reached on Monday-Friday 9:00AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffery A Gaffin can be reached on 703 308-3301. The fax phone numbers for the organization where this application or proceeding is assigned are 703 746-7239 for regular communications and 703 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305-3900.

EJS  
March 17, 2003

  
JEFFREY GAFFIN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100